
Lake Calhoun Refectory

Facilities Assessment

3000 E. Calhoun
Parkway

November 16, 2016



CUNINGHAM
G R O U P

Table of Contents

- 1. Introduction..... Page 3
- 2. Facilities Assessment
 - Architectural..... Page 4-14
 - Mechanical and Plumbing..... Page 15-24
 - Electrical Page 25-28
- 3. Priorities and Preliminary Opinion of Project Costs..... Page 29
- 4. Appendix..... Page 30
 - Equipment Lifespan Table

Facilities Assessment Summary

Lake Calhoun Refectory

Introduction

Due to the overwhelming popularity of the Chain of Lakes Regional Park, the Minneapolis Park and Recreation Board (MPRB) is undergoing an effort to address rapid growth in user population, trail upgrades and/or replacement, environmental upgrades and repair, and facilities assessment and upgrades. To this end, the Lake Calhoun-Harriet Master Plan was developed and multiple focus areas for improvement were identified. One of these focus areas is Northeast Calhoun, which includes the Lake Calhoun Refectory.

A facilities assessment was conducted on July 25, 2016 to identify deficiencies and provide background for priorities in planning future work for the Lake Calhoun Refectory. Disciplines of architecture, mechanical and electrical engineering viewed the facilities. The tenant operators (Tin Fish) provided background information about the building and site in terms of its current use and modifications over time. Construction documents from the 1988 renovation were shared with the team.

Facilities Assessment Summary

Lake Calhoun Refectory

Facilities Assessment - Architecture



Building Area:

Open Covered: 2,055 sq.ft.

Enclosed: 1,945 sq.ft.

Total: 4,000 sq.ft.

Dates of Construction:

1933 - Original

1988 - Renovation

The Calhoun Refectory building is located at 3000 E. Calhoun Parkway and Lake Street W. There is no dedicated public parking for the building itself, though there is nearby metered street parking, access by foot and bicycle paths, and a drop-off area on the south side of the property. The building supports food and beverage service, as well as public restroom facilities.

The building's original construction was in the 1930s, and a renovation was done in 1988. The building is a single story and the primary structure is timber framing with metal roofing tiles and walls of plaster stucco finish. A little over half of the building footprint (1,945 sf) is enclosed space containing the building functions, including food preparation and service, freezer and cold storage, keg storage, dishwashing area, mechanical space and public and employee restrooms. The remaining square footage (2,055 sf) is covered open area currently used for seating and queueing for ordering.

Building Systems

The building is constructed on a 4" concrete slab and topping which was poured over the existing slab and topping in 1988. The structure is heavy timber framing and the roof is wood sheathing supported on wood rafters and joists with roofing felt and metal tile shingles.

Concrete block forms the exterior walls with a metal lath and stucco finish on the exterior and painted gyp sheathing on the interior. Walls that are exposed to the exterior on multiple sides (i.e., at the perimeter of the open covered area) are finished with stucco on all exposed sides. Windows are infill aluminum frame with single pane glass. Open archways are fitted with uninsulated, lockable, manually operated steel roll-up doors.

The building is protected with a fire alarm system, and a kitchen fire suppression system is in place.

Entry

The building is accessed via open archways on the southwest corner, west side, north side and northeast corner. The main service counter is on the west side, within the covered area. Deliveries

Facilities Assessment Summary

Lake Calhoun Refectory

are received on the east side through both a double door at the food preparation area and a single door directly into the kitchen area.

Site / Circulation / Safety

- Bike racks located on the north side of the building are corroded and have flaking paint, and are not of adequate quantity to meet current demand. Users were witnessed leaving their bikes freestanding and locking them to each other due to insufficient bike parking.
Recommendation: Clean and refinish existing bike racks. Relocate existing and add new bike racks per revised site and building design.
- The trash containers are in an open area on the southeast corner of the building and are directly adjacent to the pedestrian path, and deliveries must be carried or wheeled to the back door along the same pathway designated for pedestrian traffic moving through the site.
Recommendation: Re-route the pedestrian pathway away from the back of the building, and provide employee and delivery-only access at the rear building entry.
- Customer drop-off is located on the south side of the building, and is shared with sailing school drop-off and pick-up, boat launching, as well as trash collection and delivery trucks for the building vendor. There is heaving and cracking of the concrete at the curb cut in this area and is likely due to the weight of trash and delivery truck traffic. Freeze/thaw cycles may cause continued damage over time and allow moisture intrusion.
Recommendation: Provide a new designated trash collection and delivery area designed to handle the load of heavy equipment.
- Access from the drop-off area as well as the sidewalk to the building are not compliant with Minnesota Accessibility Code requirements for slope and cross-slope. This applies to other areas around the building, including the existing pathway to the drinking fountain.
Recommendation: Regrade site to meet maximum slopes and cross-slopes, and clearly mark the accessible path through the site.
- The composite decking material at the plaza is warped in some areas.
Recommendation: Replace affected boards to match surrounding material.
- There is a general lack of shade and a prevalent exposure to the elements at most of the seating on the plaza.
Recommendation: Provide additional shade in the form of canopied shade structures and/or natural shading via plantings and topiaries.
- The primary existing trees at the plaza facing the lake are not thriving, likely due to initial planting conditions as well as their existence in raised concrete planters which do not allow for optimal tree growth and survival. This is likely a contribution to the lack of shade or dappled light at the plaza.
Recommendation: When the terrace is redone, a Silva Cell sub-structure should be put in place with a loamy soil mix conducive to optimal tree growth and infiltration. This system then acts as the structural base for any hard surface paving placed on top of it, while at the same time allowing tree roots optimal growth opportunities. This system also performs as a stormwater treatment filtering bmp – which is also of benefit due to the proximity to the lakefront. It can act as an “underground rain garden” and in can be design to contain up to a 2” rainfall event.

Facilities Assessment Summary

Lake Calhoun Refectory



Cracking at drop-off.



Shared drop-off.



Shared pedestrian pathway and trash area.



Warping composite deck.

Facilities Assessment Summary

Lake Calhoun Refectory



Lack of shade.



Main trees at plaza.

Exterior Envelope

A stucco system covers the exterior sides of the building. The stucco is installed on metal lath over building paper on ½” sheathing fastened to wood studs over 4” concrete masonry. The base condition of the stucco wall appears to employ a mortar joint.

The stucco is generally in very good condition, but its general appearance would benefit from seasonal exterior washing. Some areas for correction are:

- Some cracking and damage is evident at the trash area where dumpsters have been bumped into the walls, providing areas for water intrusion into the wall assembly.
Recommendation: Damage to the wall finish should be patched, textured and painted to match existing. Bollards placed at key locations to prevent rolling of dumpsters into the building face would prevent further damage.
- There are four (4) locations on the building exterior where light fixtures have been removed, and the remaining holes and wall finish have not been repaired, providing areas for water intrusion into the wall assembly.
Recommendation: Holes in stucco and unfinished areas can be patched and painted to match existing finish color and texture.
- The base condition of the exterior stucco walls at the existing stucco plinth appears to have a mortared joint, which shows failure and in most locations is cracked, loose and/or altogether missing.
Recommendation: Install backer rod and silicone soft joint at base of stucco walls.
- The existing grease hoods discharge through a sidewall exhaust at the trash area. This configuration does not meet current code, and the downturn in the exhaust leaves dirt and grease on the exterior wall surface.
Recommendation: Upgrade the kitchen exhaust system and associated ductwork to a code-compliant system. Refer to the mechanical portion of this report for more detail.

Facilities Assessment Summary

Lake Calhoun Refectory



Damage to Stucco Finish.



Area at removed fixtures.



Mortar joint at stucco base.



Wall finish at fountain.



Grease hoods at exterior wall.

Facilities Assessment Summary

Lake Calhoun Refectory

Windows and Exterior Doors

Existing windows are infill units at previously existing archways. They are aluminum frames with single pane, 1/4" tempered glass, and are generally in good condition.

- The flashing detail at the windows does not have positive slope for drainage, rather it slopes back toward the wall openings. No sealant was observed at one of the window frames.
Recommendation: Sill flashing at all windows should be replaced to have positive slope, and ensure proper waterproofing and sealant at perimeter of window openings.

Exterior doors and screens were in fair to good condition.

- Some exterior archways have metal guardrail infill. At several open archways, it is evident that previously existing guardrails have been removed and the saw-cut edges of those railings remain exposed as part of the building both at the wall and the slab. These edges are corroding and discoloring the stucco and concrete finishes. Cracking at the concrete slab at these locations was also observed, likely due to water intrusion and the freeze-thaw cycle, which is likely to worsen over time.
Recommendation: Cut the wall finish at these locations to access and remove the remaining pieces of guardrail. Patch stucco, texture and paint to match existing. Saw cut the slab and remove the remaining slab and guardrail stubs. Place new concrete to receive new floor finish.



Water collecting at sill flashing.



No sealant at frame.

Roof Assembly

The roof system is sheathing supported on wood rafters and joists with roofing felt and metal tile shingles. Roof drainage is formed by structural slope, and water sheds to grade.

- The roofing and soffit panels appear to be of recent age, and are a metal faux clay tile system. However, about 50% of the end spacers that close the gaps at the eaves were observed to be loose, dislodged or missing. The paint at the raw edge of the metal tiles is also wearing off.
Recommendation: All spacers at roof eaves should be replaced and secured to protect against wind-driven rain and animals. Re-finish or place trim at the raw tile edge.
- Roofing filler pieces at the ridge cap are missing in several places, and a bird or animal nest was observed at that location.

Facilities Assessment Summary

Lake Calhoun Refectory

Recommendation: Infill pieces should be replaced along the length of the ridge cap and secured.

At least a portion of the building's timber structure has been exposed to at least one fire. Charring of varying degrees is visible on roof framing, beam and column members. Damage should be assessed by a structural engineer if a professional analysis has not already been done.



Roof tile at eave.



Ridge cap.



Fire damage at roof structure.

Interior Finishes Overview

Existing interior wall construction is of the following types:

- wood stud with gypsum board on each side
- wood stud with gypsum board on one side and lap siding on plywood on one side (former breezeway)
- wood stud with 6" concrete masonry with furring strips and lap siding on one side (lavatory vestibules and pavilion)
- 8" exposed concrete masonry (lavatories)

Facilities Assessment Summary

Lake Calhoun Refectory

Various materials are used for final finish including paint and reinforced fiberglass panels. Floors are quarry tile throughout, and ceilings are painted plywood with decorative 1"x2" wood lattice.

Walls

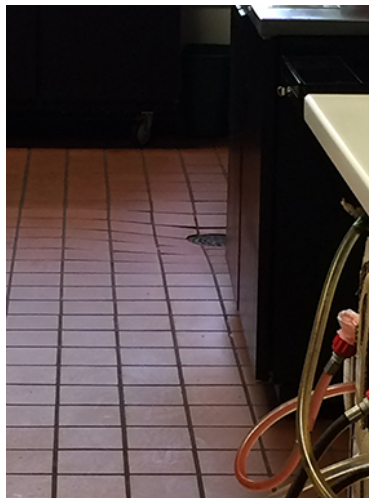
- FRP was observed on some walls, though wall deterioration can be seen and is likely occurring behind some of the FRP as well.
Recommendation: Where deterioration is evident, and replace sheathing and refinish wall. Install resilient wallcovering intended for commercial kitchen spaces at all food preparation areas.

Floors

- Floor tile on the interior of the building, including the floor in the open covered areas, is very uneven, cracked in some places, missing grout in some areas, and does not appear to properly slope to existing drains.
Recommendation: Existing quarry tile should be removed and drain locations should be examined against new concept layout and located as appropriate. The topping slab should be re-graded to properly slope to all drains. New flooring for both public and back of house areas should be installed. Maintaining a year-round building temperature of above freezing will interrupt the freeze-thaw cycle, which will help avoid cracking of new material.
- Interior base of wall conditions is generally poor and much corrosion, material build-up and wear was observed.
Recommendation: Remove and replace flooring and cove base with a code-compliant, resilient material designed to handle the more frequent and heavy duty cleaning typical of today's commercial kitchens.



Bottom of wall.



Slope at drain.



Eroded grout at drain.

Ceilings

The ceiling system in public areas and former breezeway is painted plywood with surface-applied 1"x2" wood lattice grid. It is in generally good condition, though the typical top of column detail provides areas for bird nesting. Back of house ceilings are painted 1/2" gypsum board on wood framing.

Facilities Assessment Summary

Lake Calhoun Refectory



Bird nest at column.

Interior Lighting

- Existing interior and open covered area light levels appear to be low and likely do not meet code minimum.
Recommendation: Install additional light fixtures to achieve adequate light levels for each space.

Building Services / Storage

Condition comments:

- Storage spaces are generally at maximum capacity
- Air movement and/or exhaust was insufficient or lacking in many back of house areas, including the office and dishwashing room. Refer to mechanical section of this report.
- Leaks were observed in the plumbing chase between the public restrooms. Refer to plumbing section of this report.

Restrooms

Public Restrooms

The existing public restroom configurations do not meet current Minnesota Accessibility Code requirements. Toilet compartments do not comply with minimum accessible or ambulatory requirements. Mirror heights exceed code maximum. Existing toilet fixtures, urinals, grab bars and accessories should be further examined for compliance.

Recommendation: Demolish the existing restrooms and provide a new separate, fully accessible restroom facility to accommodate current and anticipated future occupancy and increased program. A family or gender-neutral accommodation should also be considered, for privacy, accessibility, and parents with children of the opposite gender. Updated water- and energy-saving technology such as high efficiency hand dryers and low flow fixtures could be incorporated. If restroom relocation cannot be achieved in the near term, the existing restrooms would need to be gutted and remodeled to meet code requirements for accessible and ambulatory stalls as well as lavatory, fixture and accessory heights, controls and clearances. This would result in the loss of one urinal.

Facilities Assessment Summary

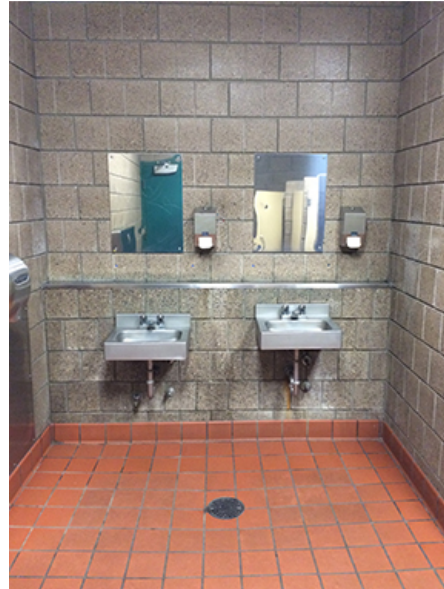
Lake Calhoun Refectory

- Current public restroom signage and design does not meet current Minnesota Accessibility Code requirements.

Recommendation: Replace/add code-compliant signage at all restrooms.



Women's restroom stalls.



Sinks in Women's restroom.



Restroom signage.



Employee restroom.

Employee Restroom

- The existing employee restroom does not meet current Minnesota Accessibility Code requirements. Additionally, per Minnesota Building Code requirements, a restroom shall not open directly onto an area used in the preparation of food.

Recommendation: Expand and renovate existing employee restroom to meet Accessibility Code requirements, and provide an alcove at the entry to shield it from dishwashing area.

Facilities Assessment Summary

Lake Calhoun Refectory

Drinking Fountains

- The existing drinking fountain at the restroom entrances does not meet current Minnesota Accessibility Code requirements.
Recommendation: Replace drinking fountain with a dual hi-lo model with accessible controls and a bottle filler. Provide resilient wall and base material at surround.
- The path to the drinking fountain does not appear to meet maximum cross-slope requirements.
Recommendation: Re-grade the pathway and hardscape that access the drinking fountains to meet maximum cross slopes.

Mechanical, Electrical, Plumbing and Technology

Facilities Assessment

HVAC Systems

Mechanical Distribution Equipment typically has a rated life of 15 - 20 years for equipment and 35 years for distribution. Several factors such as product quality, environment, preventive maintenance and equipment loading can shorten or extend the life.

The current facility is seasonal (May – October) and winterized at the end of each operational season.

Kitchen/Serving/Office

- The kitchen is served by operable windows and makeup air units located in the attic space. Controls for the systems were observed on the wall, but it was noted that they were not operational. Intake is ceiling mounted and distribution is through uninsulated steel ductwork and discharged through ceiling mounted directional diffusers. During a more recent front of house remodel, the outside air intake location was enclosed so it now resides inside the building envelope.
Recommendation: Determine if enough fresh air is provided through existing openings when building is operational. If not, a new code-compliant make-up air system should be installed.
- The associated kitchen hood is exhausted by a utility set exhaust fan located in the attic space. Welded ductwork transports the grease-laden air from the hood to the fan and from the fan to the discharge. The ductwork likely does not meet the distance requirement from combustible materials. Discharge is through the sidewall with bird screened downturned elbows under the eave. This installation does not meet current code. This system was installed in the late 1980's and is in poor condition. Ductwork clearance from combustibles is questionable. It is deficient with respect to current code requirements. No air is supplied to the office.
Recommendation: Replace the entire kitchen HVAC system with a code compliant system



Kitchen hoods over the cooking appliances.

The hoods are served by exhaust fans located above the ceiling in the attic space. The fans are original to the 1988 remodel.

Facilities Assessment Summary

Lake Calhoun Refectory



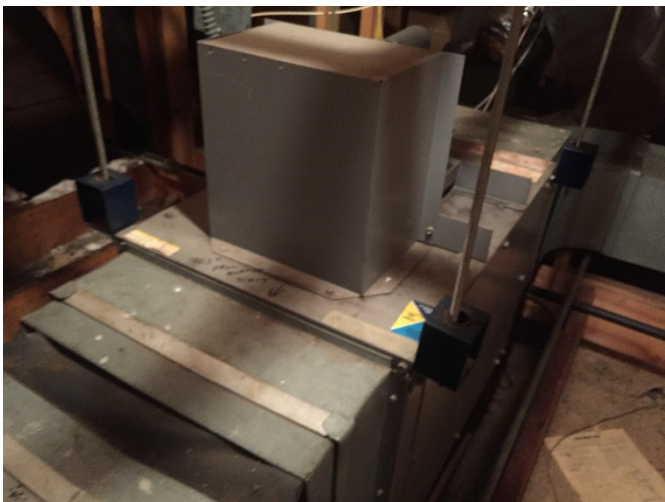
Kitchen hood exhaust termination.

These do not meet current code requirements for discharge per the Minnesota Mechanical Code and NFPA 96.



Welded kitchen hood exhaust ductwork.

Further investigation is required to confirm if the duct and routing meet the required clearances from combustible construction.



Inline exhaust fan serving the facility.

Original to the remodel in 1988.

Facilities Assessment Summary

Lake Calhoun Refectory



Makeup air intake grilles.

These were previously outside the envelope of the facility, but were enclosed during a recent remodel. The makeup air unit they supply is not operational. The kitchen exhaust makeup air is supplied through open windows and doors and leakage.

Restrooms

Inline fans exhaust the restrooms. No other heating, cooling or ventilation was observed.

- The equipment was installed in the late 1980's and is in poor condition. The fans are well past their useful lives.
Recommendation: Replace restroom exhaust system.



Restroom exhaust grille.

Storage

- The storage room is also used as a dishwashing and mechanical room. No heating, cooling or ventilation was observed. No dedicated dish exhaust was observed. This space does not meet code requirements to be used as a dishwashing area. It does not have a mechanical system, ventilation or exhaust system.
Recommendation: Provide a new code-compliant system including exhaust.

Facilities Assessment Summary

Lake Calhoun Refectory



Dishwashing area.

No ventilation observed.

Breezeway/Prep

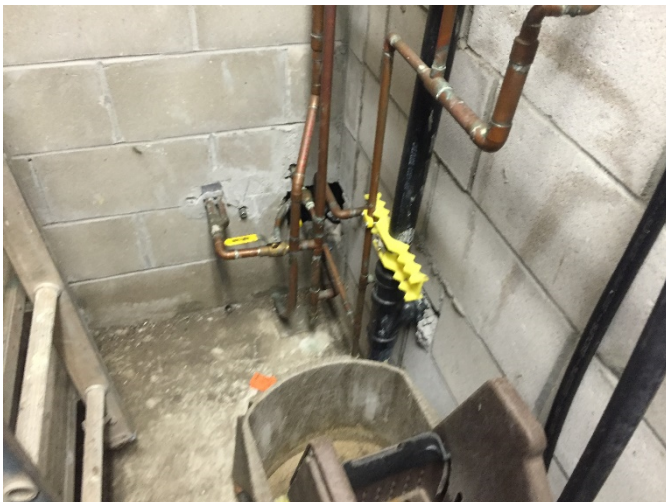
- The breezeway was enclosed to provide space for kitchen prep and cooler storage. No heating, cooling or ventilation was observed. No dedicated dish exhaust was observed. This space does not meet code requirements to be used as a kitchen prep area. It does not have a mechanical system, ventilation or exhaust system.

Recommendation: Provide a new code compliant system including exhaust.

Plumbing Systems

Domestic Water

A 1-1/2" domestic water service is supplied to the building. The meter is located in the dish/storage room. Domestic water is distributed by uninsulated copper piping with soldered joints. Any upgrades or repairs have been installed with copper piping. The piping is in fair condition. Hot water is stored and distributed at 110-120°F.



Domestic water and assumed irrigation piping.

A backflow preventer is installed upstream on the assumed irrigation pipe. Valving on the backflow preventer is shut off so the piping is assumed not to be operational.

Facilities Assessment Summary

Lake Calhoun Refectory



Thermostatic mixing valve serving the lavatories.

Further investigation needs to occur to determine if the valve meets ASSE 1070 requirements for use on public lavatories.

Gas

Gas piping is threaded steel. The piping is in fair condition, but showing some signs of surface corrosion. It has been extended to the water heater and kitchen appliances. Two pound (2#) gas is available in the facility.



Gas meter.

2# gas is available in the facility and regulated at the meter. The sign placed on the meter mentions a water cooled freezer unit. Further investigation needs to occur to determine if this system meets the current energy code if reused in the future design of the facility and will be allowed to be reinstalled.

Sanitary

The sanitary waste and vent system above ground consists of cast iron, steel and ABS piping that appears to be in fair condition with a few observed leaks. Our team was unable to ascertain what material the below ground systems are, however, it is more than likely cast iron. A grease interceptor was not observed in the kitchen to serve the three-compartment sink. Existing plans note the facility is served by a 4" sanitary service.

Facilities Assessment Summary

Lake Calhoun Refectory



Restroom chase water and sanitary waste piping.

Domestic water is uninsulated copper piping with soldered joints. Sanitary waste is cast iron. Vent piping is ABS. A leak was observed on one of the women's water closets.



Three compartment sink used for dishwashing.

No grease interceptor was observed.

Storm

No storm drainage system was observed.

Plumbing Fixtures (restrooms)

In general, the plumbing fixtures are in working order. Public restrooms fixtures are stainless steel for high abuse areas. Water closets and urinals could be improved to low flow fixtures when replaced. Water closets are flush valve type with manual operation. Lavatory faucets are manually activated, metering type.

Facilities Assessment Summary

Lake Calhoun Refectory



Men's public restroom urinals.

Stainless steel construction with manual pushbutton operation.



Men's public restroom water closet.

Stainless steel construction with manual pushbutton operation.
Does not meet ADA requirements for wheel chair access.



Men's public restroom lavatory.

Stainless steel construction with manual pushbutton operation.
Unlikely meets ADA requirements for mounting height.

Facilities Assessment Summary

Lake Calhoun Refectory

Plumbing Fixtures (Tin Fish)

In general, the plumbing fixtures are in working order. Hand wash and scullery sinks are stainless steel. Their faucets are manually activated.



Handwash sink and instantaneous water heater located in the front of house area.

The TP valve is piped to near the floor below the sink. Discharge could scald someone standing at the sink.



Public drinking fountain located on the back side of the facility constructed of high abuse stainless steel.

Water heater

The facility is provided with hot water by an A.O. Smith natural gas-fired, storage tank type water heater. Input is rated at 150,000 Btu for a recovery rate or 178.2 gallons per hour. The 100-gallon water heater was installed in 2015 and is in good condition. It is a sealed combustion unit with vent through the roof and sidewall combustion air.

Facilities Assessment Summary

Lake Calhoun Refectory



AO Smith cyclone, high efficiency water heater.

Model BTH 150-200. Natural gas fired with 178.18 gallons of recovery per hour. 100 gallon tank.

The heater is only one year old and in good condition. Domestic hot water distribution piping is not insulated. Domestic cold water distribution piping is also not insulated.

Plumbing Recommendations

Replace plumbing fixtures with new low flow fixtures. Modify system as required for service of fixtures in new facility layout.

The following sections contain a summary of the mechanical systems observed within each building. The information gathered on equipment is based on casual observation and grading is based on a scale of 1-5, with age, physical appearance, capacity, expandability, safety, and observer's opinion being the factors in determining an equipment grade. The grading scale is further described as follows:

- 5: Excellent condition, no unforeseen maintenance required, early in its serviceable life.
- 4: Good condition, some maintenance expected, midway through its serviceable life.
- 3: Fair condition, ongoing maintenance expected, near or at the end of its rated life.
- 2: Poor condition, parts difficult to obtain, has exceeded its rated life, safety may be a concern.
- 1: Failed equipment or not present.

Facilities Assessment Summary

Lake Calhoun Refectory

Mechanical Systems Summary

Mechanical Analysis	Description	Comments
HVAC - Kitchen	Exhaust for hoods. No makeup air. Poor distribution.	Replace system. Modify as required for new building layout. Grade: 1
HVAC - Restrooms	Inline fans. No makeup air. No heating or cooling. Past useful life.	Replace system. Modify as required for new building layout. Grade: 2
HVAC – Storage/Dish	No heating, cooling or ventilation systems.	Add system. Modify as required for new building layout. Grade: 1
HVAC – Breezeway	No heating, cooling or ventilation systems.	Add system. Modify as required for new building layout. Grade: 1
Plumbing	Copper distribution piping; high efficiency water heater	Modify, as required, for new facility layout. Insulate distribution piping. Replace/remodel so fixtures are ADA compliant as required. Grade: 4
Fire Protection	No system installed.	Install system if required by code for new facility layout. Grade: 1

Electrical Systems

Power Systems

The building is generally sound from an electrical standpoint. The building is comprised of block wall and wood structure with both surface raceway as well as recessed devices. Raceways appear to be in good condition. Electrical devices are generally in good shape and wiring and covers in public areas are concealed. Lighting is generally fluorescent and LED with a few incandescent lamps. Lighting levels were not measured with a meter, however, appears to be consistent. Lighting switches seem to be operable. Electrical connections to mechanical equipment other motors seem to be compliant with recommended wiring methods.

Fire Alarm Systems

The building has a fire alarm system. From the walkthrough, additional fire alarm devices may be required. Existing kitchen equipment and ventilation/suppression systems may need to be reviewed further.

Recommendation: Review fire alarm system and review with code officials on additional fire alarm devices.

Data Systems

There are several systems present. Data communications appear to be functional. Operator did not comment on any issues nor did any items relating to data connections appear to be non-functional. A security system exists.

Power Distribution

The distribution appears to be a 400A 120/240V 1 phase 3 wire service consisting of several disconnects and electrical panels:

Panel L1

- Panel is a Cutler-Hammer 42 circuit panel
- Fed from 200A fused disconnect
- Loads vary from kitchen equipment to receptacles

Panel L2

- Panel is a Cutler-Hammer 42 circuit panel
- Fed from 200A fused disconnect
- Note: Loads were not reviewed as access was unavailable due to material in front of equipment

Xcel has an enclosure with meter that serves as a tap box for distribution. This enclosure feeds the two (2) 200A fused disconnects for Panels L1 and L2.

Facilities Assessment Summary

Lake Calhoun Refectory



(2) 200A panels are in fair condition.



(2) 200A fused disconnects.

Lighting Control

A Hubbell CX Lighting Control System exists to serve the building lighting control. From information obtained from the manufacturer, this panel is an 8-relay panel with 4-5 relays utilized. The system uses time-of-day, scheduling, and on/off functionality. The existing panel is a master panel which can be used for control if an additional panel is needed.

Utility Service

The building's power is provided by Xcel Energy. The utility service is a 400A 120/240V 1 Phase 3 Wire system. Per Xcel, the maximum demand is approximately 24kW. This equates to approximately 118A at 0.8 power factor. Depending on additional loads considered in future projects, the existing service has approximately 250A of capacity.

Lighting

- The existing interior lighting is linear fluorescent wraparound lighting. Exterior down lighting (and canopy area) are typical 6" and 8" recessed LED can lights. Newer (2012) Lighting Control System Exists for ON/OFF, Time of Day, and scheduling functionality. *Recommendation:* Interior lighting levels are fairly consistent where some areas could be increased for better illumination for utilization of space with possible upgrade to LED lighting. Replacing existing interior lighting with LED lighting would provide maintenance and energy savings for the Owner. With a variety of LED fixtures, retrofits, or lamps available, the Owner has several options to cost saving benefits from the LED technology.
- Exterior lighting operation was not observed as the walk-through was completed in the afternoon hours. *Recommendation:* Site lighting should be measured for minimum light levels after dark. If existing light levels are found to be inadequate, install additional site lighting.

Facilities Assessment Summary

Lake Calhoun Refectory

- Emergency lighting may not be sufficient. From the walk-through, it was inconclusive if standard lighting had emergency ballasts installed. A few emergency battery pack lighting were observed.

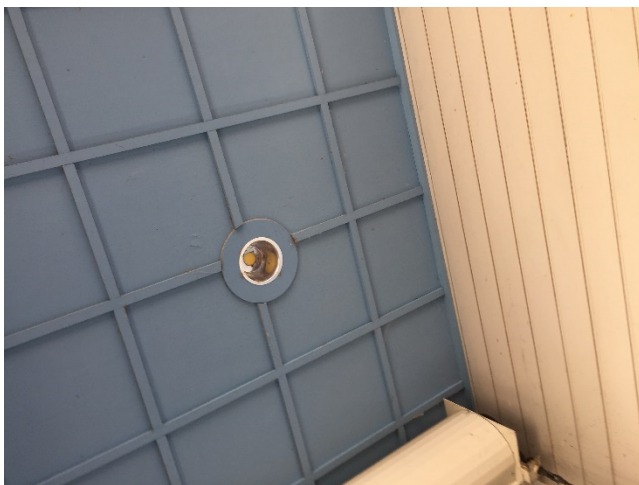
Recommendation: Review emergency lighting for egress and install additional emergency lighting where required. Verify the presence of emergency ballasts, and provide where deficient.



Incoming Xcel service.



Lighting Control system



LED lighting at canopy.



Interior fluorescent lighting.

Facilities Assessment Summary

Lake Calhoun Refectory

Some areas of concern relative to electrical devices:

- Some electrical devices are located in close proximity to wet locations.
Recommendation: In wet areas, provide Ground Fault Interrupting Circuit devices (Breakers or receptacles). In wash down kitchen areas, provide weather proof devices.
- Some electrical devices are located in areas that could be accessible to children.
Recommendation: Tamper-resistant devices in areas where children could be present.
- Commercial plug strips were observed at kitchen equipment areas.
Recommendation: Add additional wiring devices and remove commercial plugstrips.



Devices at wet areas.



Existing plug strips.

Priorities and Preliminary Opinion of Project Costs

The following is a rough estimate of costs of our recommendations. The “Existing” section outlines what we recommend as normal maintenance if nothing else were done on the site. This includes rough budgets and recommended timelines. The “Proposed” section outlines rough budgets for each phase of the proposed design. The proposed budgets do not account for inflation.

Preliminary Opinion of Project Costs

	TIMING	ADA	BUILDING	KITCHEN	MEP	Total
EXISTING	0 to 1 years	Create ADA Upgrade Action Plan	Perform Energy and Sustainability analysis of future scheme	Create Health Department Action Plan	\$10,000 - \$20,000 Create temporary fire separation at Black Iron, Install ADA egress lighting	\$10,000 - \$20,000
	1 to 5 years	\$75,000 - \$105,000 Bathrooms, Point of Sale, Site Grading, Drinking Fountains, Seating	\$20,000 - \$30,000 Renovate or replace bathrooms, exterior envelope maintenance	\$25,000 - \$30,000 Add/replace FRP, Add Hand Sinks		\$120,000 - \$165,000
	5 to 10 years	Update Action Plan every 10 years	\$50,000 - \$100,000 Upgrade all lighting	\$350,000 Equip. = \$150,000 Replace/enlarge kitchen and upgrade equipment to match demand	\$50,000 - \$75,000 Provide HVAC to restrooms	\$600,000 - \$675,000
						\$730,000 - \$860,000
PROPOSED	Phase 1 Construct new 2,000 sf restroom building, renovation of bike and pedestrian pathways south to curb cut	Site Work = New Restroom Building =	\$50,000 - \$80,000 \$800,000 - \$1,000,000 (\$400-500/sf)			\$850,000 - \$1,080,000
	Phase 2 All site renovations north of drop-off area	Demolition = Shell = Kitchen/Interior = Covered Seating = Site = *New Furniture = *Kitchen Equipment =	\$50,000 - \$75,000 (\$12.50-18.75/sf) \$100,000 (\$25/sf) \$537,000 (\$206/sf) \$200,000 (\$118/sf) \$180,000 - \$280,000 \$100,000 \$200,000			\$1,067,000 - \$1,192,000 *FFE = \$300,000
	Phase 2a 1,700 sf building addition	Addition =	\$350,000 (\$205/sf)			\$350,000
	Phase 3 Removal of drop-off area, balance of site renovations, relocation of recreational equipment rental facility	Site =	\$170,000 - \$240,000			\$170,000 - \$240,000
						\$2,737,000 - \$3,162,000

Appendix A

Equipment Lifespan Table

The following table represents the assumed rated life of equipment. This list is based on information gathered from the Department of Energy and industry experience.

DESCRIPTION	YEARS	DESCRIPTION	YEARS	DESCRIPTION	YEARS
MAKE UP AIR UNIT	20	BURNER	21	CHILLER - ABSORPTION	23
ELECTRIC RADIATION	35	FURNACE	18	PUMP	20
ELECTRIC INFRARED HEATER	40	UNIT HEATER	20	SUMP PUMP	15
CABINET UNIT HEATER	15	RADIANT HEATER - HOT WATER	25	WATER HEATER	10
AIR COMPRESSOR	25	DIFFUSERS, REGISTERS AND GRILLES	27	WATER SOFTENER	10
AIR COMPRESSOR - CONTROLS	25	VAV BOXES	20	DUCT DISTRIBUTION	35
SPLIT SYSTEM	15	CENTRIFUGAL FANS	25	GAS DISTRIBUTION	30
AIR DRYER FOR AIR COMPRESSOR	25	ROOF MOUNTED FANS	20	DOMESTIC WATER	35
EXHAUST FAN	20	HEAT EXCHANGERS	24	STORM DRAINAGE	30
ROOF TOP UNIT	15	COMPRESSORS	20	SANITARY DRAINAGE	30
RETURN FAN	20	COOLING TOWERS	20	FIRE PROTECTION	40
SUPPLY FAN	20	AIR COOLED CONDENSERS	20	TEMPERATURE CONTROLS	20
HEAT RECOVERY AIR-TO-AIR EXCHANGER	15	PNEUMATIC ACTUATORS	20	RE-COMMISSIONING	5
GAS FIRED UNIT HEATER	15	SPLIT SYSTEM A/C UNIT	15	REBALANCE AIR SIDE	5
BOILER	20	WINDOW A/C UNIT	10	DAMPERS	20
FAN COIL	20	HEAT PUMP - WATER TO AIR	19	COILS	20
SHUTOFF VAV BOX	20	FAN POWERED VAV BOX W/ELEC REHEAT	20	SHUTOFF VAV BOX WITH ELEC REHEAT	20